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Wiesneriomyces machilicola sp. nov. from China

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Abstract—A new microfungus collected from dead leaves of *Machilus ichangensis* in China is described and illustrated as *Wiesneriomyces machilicola* (*Wiesneriomycetaceae*, *Dothideomycetes*). The species is distinguished by 3–6-celled, straight or falcate, hyaline conidia, 35–45 μm long.

Key words—anamorph, asexual ascomycota, microfungi, taxonomy.

Introduction

The genus *Wiesneriomyces* Koord. was erected by Koorders (1907), and typified by *W. javanicus* Koord. Kirk (1984), who identified *Volutellaria laurina* Tassi as an earlier synonym of *W. javanicus*, published the new combination *Wiesneriomyces laurinus* (Tassi) P.M. Kirk as the correct name for the species. Kuthubutheen & Nawawi (1988) described a second species, *W. conjunctosporus* Kuthub. & Nawawi.

A recently proposed genus, *Parawiesneriomyces*, is morphologically similar to *Wiesneriomyces* but can be differentiated by its sporodochia that are not elevated by a dark pseudoparenchymatous stalk and setae that are not directly linked to sporodochia but also develop without sporodochia (Crous et al. 2016).

An asexual fungus colonizing dead leaves of *Machilus ichangensis* collected from Duheyuan National Nature Reserve in Hubei, China, is proposed as a new species, described and illustrated here as *Wiesneriomyces machilicola*.

Materials & methods

Duheyuan National Nature Reserve, Guangdu, Zhushan county, Hubei, China was surveyed for hyphomycetes in September 2016. The collected specimens were first examined under an Olympus SZX7 stereomicroscope to prepare wet mounts, and microfungi were mounted in 85% lactic acid for further observation. The microfungi were examined and fungal structures were measured under a Zeiss Imager.M2 compound microscope with differential interference contrast (DIC). Photomicrographs were taken with a Zeiss Axiocam 506 color camera. Measurements of the fungal structures were made under a 100× objective lens and statistically analyzed for means and standard deviations with a 95% confidence interval of means.

The type specimen is deposited in U.S. National Fungus Collections, Beltsville, MD, U.S.A. (BPI).

Results

Taxonomy

Wiesneriomyces machilicola D.W. Li, Jing Y. Chen & Yi X. Wang, **sp. nov.** Fig. 1

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Differs from *Wiesneriomyces conjunctosporus* and *W. laurinus* by its shorter conidia with fewer cellular isthmuses and its almost unbranched conidiophores.

Type: China, Hubei, Zhushan county, Guangdu, Bailihe village, Yingzuiyan, Duheyuan National Nature Reserve, 31°52′18″N 110°08′56″E, dead leaves of *Machilus ichangensis* Rehder & E.H. Wilson (*Lauraceae*), Sept. 22, 2016, coll. Jing-Yuan Chen & Yi-Xun Wang (**Holotype**: BPI 910178).

Etymology: Latin, *machili-,* referring to *Machilus,* the host on which the holotype was collected; *-cola,* referring to inhabiting.

Asexual fungus. Colonies on natural substrate small, brown. Mycelium partly superficial, partly immersed in substrate, composed of branched, septate, hyphae, 2.1–4.5 µm wide, pale brown to brown. Conidiomata sporodochial, solitary, with 1–7 setae arising from the margins of the sporodochial stalk. Setae subulate, with acute apex, septate, thick-walled, dark brown to black, ≤178 µm long and 4.5–7.5 µm diam. at the base. Conidiophores semi-macronematous, arising close to one another, sometimes loosely aggregated, pale brown to brown toward the base, hyaline toward apex, septate, rarely branched. Conidiogenous cells monoblastic to polyblastic (mostly 2, rarely 1 or 3 conidia), discrete, determinate, terminate, clavate, hyaline to subhyaline, smooth, (5.6–)7–9.4(–10.6) × (2.4–)3.1–4.1(–4.2) µm (n = 20); Conidia in whitish mass sometimes becoming subhyaline, acrogenous, (3–)4–5(–6) cells connected by narrow cellular isthmuses; conidia (21.7–)35–45(–48) × 2–3 (–3.7) µm (n = 30), hyaline, smooth, slightly thick-walled, straight or falcate shaped, rarely sigmoid, unbranched; intermediate cells cylindrical, (7.5–)

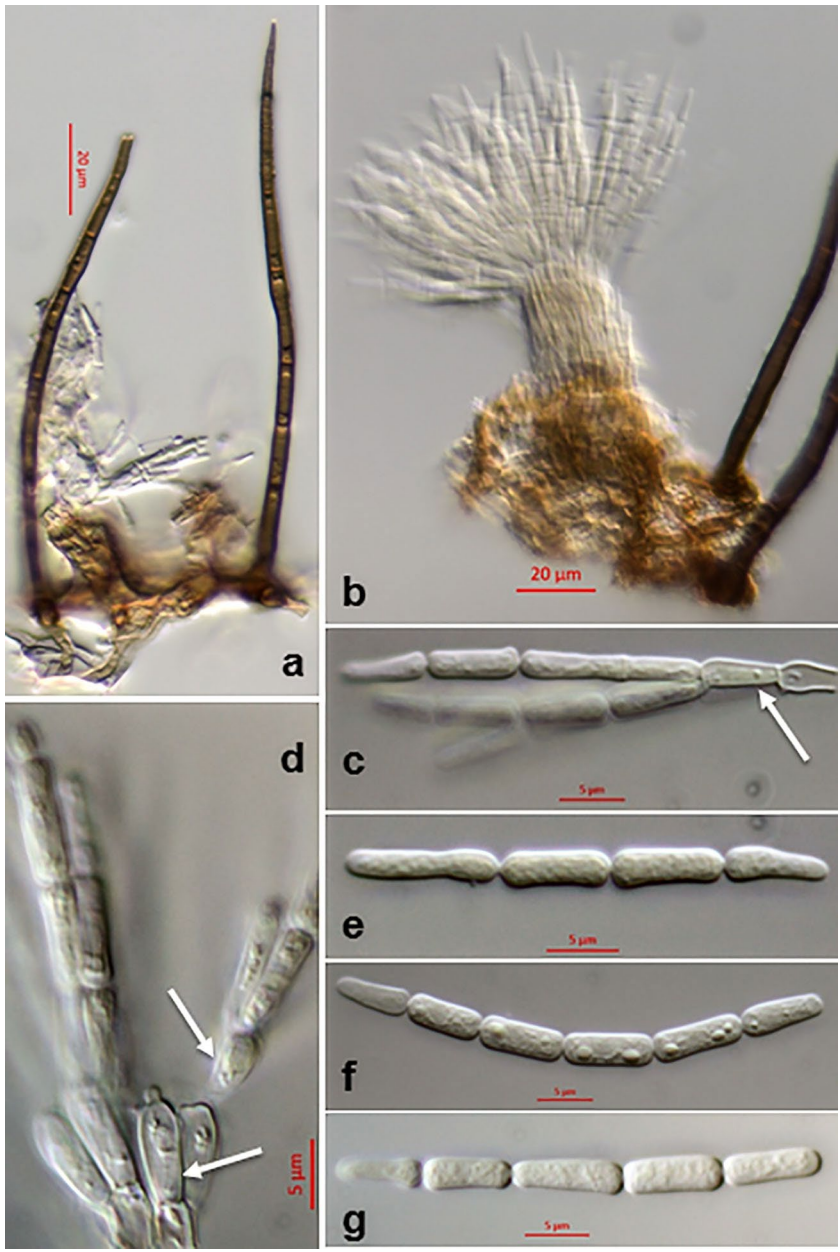

Fig. 1. *Wiesneriomyces machilicola* (holotype, BPI 910178): a, b. Setae, sporodochia, and conidia; c, d. Conidiogenous cells (arrowed) and immature conidia; e–g. Conidia. Scale bars: a, b = 20 µm; c–g = 5 µm.

8.5–11.3(–12.7) × (2.1–)2.3–3.1(–3.7) µm (n = 30); apical cell conical, (4.5–)5–8 (–9.6) µm (n = 26) long. Sexual state unknown.

Note: *Wiesneriomyces machilicola* is the third species included in *Wiesneriomyces*. Morphologically, *W. machilicola* can be distinguished from the two other species by its conidial size, setae, and conidiophores: *W. laurinus* has longer conidia (50–90 µm, with 6–8 cells) and much longer setae (≤476 µm; Maniotis & Strain 1968, Matsushima 1971), while *W. conjunctosporus* has much longer (280–360 µm) conidia with up to 15 cells and much longer (≤600 µm) setae (Kuthubutheen & Nawawi 1988).

Suetrong et al. (2014) determined from LSU and SSU phylogenetic analysis that *Wiesneriomyces* formed a monophyletic clade in the *Dothideomycetes* and proposed "*Wiesneriomycetaceae*" (nom. inval.) to accommodate *Wiesneriomyces*. Bezerra et al. (2016) proposed a new order, *Wiesneriomycetales* to accommodate *Wiesneriomyces*, *Parawiesneriomyces*, *Pseudogliophragma*, and *Speiropsis*.

Key to species of *Wiesneriomyces*

1. Conidiomata with incurved setae arising from a sporodochial stalk; conidia 50–90 µm long ..... *W. laurinus*
1. Conidiomata with setae arising from immersed mycelium around a sporodochial stalk 2
2. Conidia 280–360 µm long ..... *W. conjunctosporus*
2. Conidia 22–48 µm long ..... *W. machilicola*

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